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MPCA

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RE: Issues Regarding Rebranded Highway 100/County Route 3 Site in  
St. Louis Park, MN

Dear Ladies and Gentlemen:

Daikin Applied Americas Inc. and Super Radiator Coils, LP (collectively, "the Parties") write out of serious concern that the State of Minnesota has undertaken to ignore or misrepresent the realities of the hydrogeology and groundwater chemistry of the City of St. Louis Park, Minnesota and its surrounding communities in recent communications to the Environmental Protection Agency (EPA) and in public postings on its website. A very large area of public drinking water contamination has been written off the record in the guise of changing the designation of what was originally submitted to the EPA as the "St. Louis Park Solvent Plume Site" to the "Highway 100/County Route 3" site ("Hwy 100 Site"). The Parties are also concerned that the City itself is rumored to be seeking EPA and Department of Justice (DOJ) support to allow the City to decrease its remedial responsibilities under a federal consent decree that governs the Reilly Tar Superfund site, despite ongoing unaddressed volatile organic compound (VOC) contamination concerns associated with that site.

As some of you will recall, on November 29, 2018, representatives of the Parties met with EPA Region 5 officials to express concern about the MPCA's request that EPA designate what

had been referred to as the “St. Louis Park Plume” as a Superfund site on the National Priorities List (NPL). MPCA representatives participated by phone. The Parties explained at that meeting that they were concerned the MPCA’s request does not acknowledge the widespread drinking water aquifer contamination in the area, nor does MPCA acknowledge the contamination likely resulted from multi-aquifer deep wells, especially those associated with the Reilly Tar site.

Dr. Mindy Hahn of Ramboll, on behalf of the Parties, provided a detailed presentation that demonstrates the existence of widespread Prairie du Chien aquifer VOC contamination. The Prairie du Chien is the principal aquifer from which the cities of St. Louis Park, Edina, and Hopkins draw their public water supply. The presentation pointed to clear evidence that the MPCA has not properly delineated the source area for what all involved were still referring to at the time as the St. Louis Park Solvent Plume Site. The Parties recently provided further evidence regarding potential sources of the St. Louis Park Plume Site to the MPCA last month, a copy of which is enclosed for your review and records.

Despite this evidence, however, the MPCA now alleges contamination of drinking water wells in St. Louis Park and Edina can be traced back to a specific neighborhood of St. Louis Park that is east of the Reilly Tar Site, i.e., what the MPCA recently has begun referring to as the “Highway 100 and County Road 3 Groundwater Plume Site.” *See, e.g.*, Letter from MPCA Commissioner Laura Bishop to EPA Region 5 Administrator Cathy Stepp, dated August 21, 2019. The MPCA purports to blame the neighborhood east of the Reilly Tar Site for very deep contamination of the municipal drinking water wells and ignores that the former bog area of the Reilly Tar site is a source of such shallow contamination. *See, e.g.*, <https://www.pca.state.mn.us/waste/highway-100-and-county-road-3-groundwater-plume-site>. Indeed, a plume of contamination emanating from the Reilly Tar Site (as shown in samples collected from Reilly Tar site extraction wells W420 and W421) stretches from that site at least all the way through the alleged culprit neighborhood and beyond in the deep Drift and Platteville limestone aquifer. *See, e.g.* Figure 3 of the attached August 2019 report, which describes sources of contamination to these aquifers. Commissioner Bishop’s letter also fails to address or explain

The MPCA’s continued refusal to acknowledge and investigate VOC contamination associated with the Reilly Tar site (as observed in deep aquifers at the former Reilly Tar site in W23 and W105, and in the former Reilly bog at W420 and W421) ties directly with the Parties’ concern regarding the City of St. Louis Park’s stated intent to seek the support of the MPCA, the Minnesota Department of Health, EPA and DOJ to modify the City’s responsibilities under the Reilly Tar Superfund site Consent Decree (“Consent Decree”). It is the Parties’ understanding the City wishes to decrease its groundwater remediation responsibilities based on the above-referenced incomplete and misleading view of area contamination. The City—the Reilly Tar site’s responsible party, pursuant to the Consent Decree—has never been required to investigate the full extent of potential VOC contamination at or emanating from the site, despite clear and strong evidence showing the site to be a major source of the areawide contamination.

Although not privy to the language or detail proposed for the Consent Decree change, the Parties question whether the change is in the public interest, especially given MPCA’s unwillingness to recognize the shallow Reilly Tar Contamination. Rather than support a change

to the Consent Decree that would allow the City to decrease its investigative and remedial responsibilities for the Reilly Tar site, the above regulatory parties should instead be requiring the City to conduct a full VOC source investigation and, if necessary, mitigation of the site, actions that, frankly, should have been conducted decades ago.

The Parties respectfully request the enclosed report and the Parties' November 2018 presentation be made a part of the official administrative record regarding the MPCA's NPL request regarding the St. Louis Park Plume and the Hwy 100/CR 3 Site. The Parties further request this same information be made a part of the administrative record to any request from the City of St. Louis Park to amend the Consent Decree and that the EPA consider this information as it contemplates any request by the City to decrease its remedial obligations. The Parties believe unconditional support by EPA of the requested consent decree change would not be in the public interest at this time and that the issues raised in this letter demand prompt internal review.

Yours respectfully,

A handwritten signature in black ink, appearing to read 'W. P. Hefner', written in a cursive style.

William P. Hefner

c: EPA Regional Administrator Cathy Stepp  
MPCA Commissioner Laura Bishop  
MDH Commissioner Jan Malcom  
St. Louis Park Mayor Jake Spano





Prepared for  
**Daikin Applied**

Prepared by  
**Ramboll US Corporation**

Date  
**August 2019**

Project Number  
**1690007575**

# **UPGRADIENT SOURCES OF GROUNDWATER CONTAMINATION IN THE DEEP DRIFT AND PLATTEVILLE AQUIFERS**

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## EXHIBITS

Exhibit A:	Potentiometric Surfaces for the Drift and Platteville Aquifers near Reilly Tar
Exhibit B:	STS 2005 Land-Use and Source Characterization Survey Report – Edina Well Evaluation
Exhibit C:	2010 Potentiometric Surface for the Prairie du Chien Aquifer from the Reilly Tar Fourth Five-Year Review

## 1. INTRODUCTION

Ramboll US Corporation (Ramboll) was asked by Daikin Applied to review Minnesota Pollution Control Agency (MPCA) and GHD documents and data describing the groundwater conditions at and near 6714 Walker Street (hereinafter, the Site), and in the wider St. Louis Park/Edina area. The MPCA began investigating chlorinated solvent contamination in St. Louis Park in response to observed vinyl chloride detection at Edina municipal well 7, approximately two miles south of the Site. The Site is located in a historically industrial area, in the immediate vicinity of two Superfund sites (Reilly Tar and National Lead Industries/Golden Auto) and within a mile radius of dozens of other potential sources of chlorinated solvents. At the Reilly Tar Site, a coal tar distillation and wood preservation plant operated between 1917 and 1972, where waste was reportedly disposed in an onsite deep well (W23) (which originally consisted of an open borehole penetrating multiple bedrock aquifers) and to surface water in a bog to the southeast of the site.<sup>1</sup> The National Lead/Golden Auto Site was operated as a lead smelter, and lead was the focus of the remedial response there, but this site also has a history of farm implement manufacturing (Monitor Drill) between 1892 and 1929.<sup>2</sup> This report provides a summary of known and suspected chlorinated solvent contamination in the Drift and Platteville aquifers upgradient of the Site.

## 2. THE DIRECTION OF GROUNDWATER FLOW

The natural direction of groundwater flow in the vicinity of the Site is generally from west to east. The individual aquifers may exhibit somewhat different flow directions as a result of confining layers, pumping from extraction wells, or the movement of water within multi-aquifer wells. The United States Geological Survey (USGS)<sup>3</sup> has documented the fact that, in the area to the east of the Reilly Tar Superfund Site, the flow direction of the drift aquifer has a southerly component, whereas the flow direction in the Platteville aquifer has a northerly component (potentiometric surfaces for these units from this report are included in Exhibit A). Groundwater that is upgradient of the Site in the drift and Platteville aquifers, therefore, may lie to the southwest, west, and northwest of the Site.

## 3. CONTAMINATED GROUNDWATER UPGRADIENT OF THE SITE

Figure 1 shows the depiction of the "shallow" and "deep" solvent groundwater plumes in the St. Louis Park/Edina area as drawn by the MPCA and currently shown on the MPCA's webpage for the St. Louis Park Solvent and Vapor Intrusion Site,<sup>4</sup> along with the location of the Site, the Reilly Tar Superfund Site, and the Monitor Drill/National Lead/Golden Auto site. It is not clear how "shallow" and "deep" are defined by the MPCA, and it is also not clear what data the MPCA utilized as the basis of its plume depictions. However, Ramboll has identified a considerable amount of groundwater data that shows that chlorinated solvent contamination exists in groundwater above relevant action levels well to the

<sup>1</sup> EPA and MPCA, Fifth Five Year Review Reilly Tar Superfund site, 2016, p. 4.

<sup>2</sup> St. Louis Park Historical Society web page for 7003 West Lake Street, [www.slphistory.org/lake7003/](http://www.slphistory.org/lake7003/), accessed August 5, 2019.

<sup>3</sup> USGS (1994) Hydrogeology and Ground-Water Flow in the Drift and Platteville Aquifer System, St. Louis Park, Minnesota, Water Research Investigation Report 94-4204

<sup>4</sup> <https://www.pca.state.mn.us/waste/st-louis-park-solvent-plume-and-vapor-intrusion-site>, accessed 7/29/2019.

west (upgradient) of the boundary of the area MPCA depicts as "plumes" in the Drift and Platteville aquifers. Note that there is also significant chlorinated solvent contamination in the deeper Prairie du Chien and Wonewoc Sandstone (formerly the Ironston-Galesville) aquifers upgradient of the Site, but the focus of this report is the Drift and Platteville aquifers.

Figures 2a and 2b show the location of contaminated Drift and Platteville wells with concentrations of chlorinated solvents above action levels that are upgradient of the Site and, in many cases, upgradient of the MPCA "shallow" volatile organic compound (VOC) plume depiction. Each of these locations is described in the following paragraphs.

**Reilly Tar extraction well W420** is located just north of the (now closed) Sam's Club at the corner of West Lake Street and Louisiana Avenue, approximately 950 feet to the southwest of the Site (Figure 2a). This well is located near the western boundary of the MPCA's "shallow" plume limits and lies in or near the location of a bog that was used historically by Reilly Tar for liquid waste disposal. It is screened in the Drift aquifer. Samples collected from this well in 2007 contained 150 micrograms per liter (ug/L) cis-1,2-dichloroethylene (cDCE), 50 ug/L vinyl chloride (VC), and 2,500 ug/L naphthalene.<sup>5</sup> Tetrachloroethene (PCE) and trichloroethene (TCE) have also been detected in this well, which suggests that the parent solvent compound has undergone significant dechlorination (degradation).<sup>6</sup> Samples from this well also typically contain polynuclear aromatic hydrocarbons (PAHs) and benzene, toluene, ethylbenzene and xylenes (BTEX) (and exceed drinking water standards for naphthalene, benzene, ethylbenzene and benzo(a)pyrene).<sup>7</sup> Naphthalene, PAHs, and benzene are Reilly Tar Contaminants of Concern (COCs).<sup>8</sup> It is important to note that Reilly Tar liquid disposal locations, disposal wells, and former operational areas have not been investigated for the presence of chlorinated VOCs.

**AECOM Geoprobe sample B27** is located at 3356 Gorham Avenue, approximately 600 feet west of the Site (Figure 2b), and represents the western-most, i.e., most upgradient, groundwater sample collected as part of the AECOM FY2016 St. Louis Park Investigation. The deepest groundwater sample interval collected (70-74 feet below ground surface, or bgs) contained the highest concentrations of chlorinated solvents in the boring: 960 ug/L TCE, 1,900 ug/L cDCE, 1,400 ug/L trans-(1,2)-dichloroethene (tDCE), and 140 ug/L VC.<sup>9</sup> This sample also contained Reilly Tar COC naphthalene at 650 ug/L as well as benzene ethylbenzene and xylenes,<sup>10</sup> but was not analyzed for semi-volatile organic compounds (SVOCs), such as PAHs. AECOM did not collect additional groundwater samples to the west (upgradient) of this location at this depth interval, or at greater depth at this location. This represents a significant data gap in the AECOM FY2016 investigation.

**AECOM Geoprobe sample B26**, at 70-74 feet below ground surface (bgs) (just east of B27 as shown in Figure 2b), contained no detectable cDCE, but 790 ug/L tDCE, 34 ug/L VC and 140 ug/L naphthalene.<sup>11</sup>

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<sup>5</sup> MPCA (2015) Preliminary Site Assessment Report for St. Louis Park Solvent Plume, Table 4

<sup>6</sup> *Ibid*

<sup>7</sup> MPCA and EPA, Fifth Five Year Review Reilly Tar Superfund Site, 2016, p. 31.

<sup>8</sup> MPCA and EPA, Fifth Five Year Review Reilly Tar Superfund Site, 2016, Table 7. Note that benzene was not included in the Reilly Tar Remedial Action Plan, but is now considered a potential COC.

<sup>9</sup> AECOM St. Louis Park Investigation – FY2016, July 2016, Table 2

<sup>10</sup> AECOM St. Louis Park Investigation – FY2016, July 2016, Attached Laboratory Data

<sup>11</sup> AECOM St. Louis Park Investigation – FY2016, July 2016, Table 2 and Attached Laboratory Data

**AECOM Geoprobe sample B7-W-N** (at the adjoining Sidal Realty Property), located approximately 75 feet west of the western Site property boundary indicates that the deep Drift groundwater contamination observed at B27 and B26 continues under the Site. The groundwater sample from depth interval 71-75 feet bgs contained 34 ug/L PCE, 160 ug/L TCE, 1,100 ug/L cDCE, 100 ug/L tDCE, 37 ug/L VC and 8 ug/L naphthalene.<sup>12</sup>

**Flame Metals**, formerly located at 7317 West Lake Street, lies approximately 2,500 feet southwest of the Site (Figure 2a). Groundwater at this site was investigated by AECOM in 2014 on behalf of MPCA. Several on-site groundwater samples were collected with a Geoprobe, including two just above the assumed (due to refusal) bedrock (Platteville) surface at approximately 72 to 75 feet bgs. Collected groundwater samples were submitted to the Minnesota Department of Health Laboratory, which reportedly refused to analyze three samples, including the only two deep Drift samples "due to air bubbles in the sample vials." This is a common problem because the bedrock materials are alkaline and react with the acid preservative for VOCs, releasing a gas into the sample vial. All other analyzed (shallow) groundwater samples were non-detect for VOCs, with the exception of acetone. However, the investigation-derived waste water (the purge water from Geoprobe sampling) sample was found to be a hazardous waste due to its TCE content of 1,030 ug/L when analyzed for waste disposal.<sup>13</sup> Because the shallow groundwater samples were clean, the obvious logical conclusion is that the deep, unanalyzed groundwater samples from the 68- to 75-foot depth interval contained TCE concentrations far greater than 1,000 ug/L. AECOM's report nevertheless concluded that no areas of groundwater contamination were identified and inexplicably recommended no further investigation, a conclusion clearly at odds with the purge water waste characterization results.

**Schloff Chemical** is located at 3938 Meadowbrook Road, approximately 4,300 feet to the southwest of the Site (Figure 2a). This facility was historically a distribution site for PCE. PCE was received via bulk truck and rail delivery to aboveground storage tanks (ASTs), and repackaged into smaller quantities. It was investigated in the late 1980s/early 1990s and found to have significant groundwater contamination (up to 12,000 ug/L PCE),<sup>14</sup> which was never fully delineated vertically or horizontally.

**Control Data Corporation**, located at 3965 Meadowbrook Road, was across the street from Schloff (Figure 2a) Chemical and historically manufactured printed circuit boards. The groundwater there was found to be contaminated with 1,1,1-trichloroethane (TCA) with concentrations in the thousands of ug/L,<sup>15</sup> which were also not delineated vertically or horizontally.

**Lindberg Heat Treating**, located at 6981 Oxford Street, is approximately 2,600 feet to the southwest of the Site (Figure 2a) and also has a history of chlorinated solvent use and release. Groundwater concentrations of up to 51,000 ug/L of TCE were detected at this location.<sup>16</sup> The local direction of groundwater flow was unclear from this investigation, and the plume was not fully understood or delineated.

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<sup>12</sup> MPCA (2015) Preliminary Site Assessment Report for St. Louis Park Solvent Plume, Table 2

<sup>13</sup> AECOM Letter Report to MPCA – Nile Fellows, Site Investigation Report for St. Louis Park Solvent Plume – Former Flame Metals, June 19, 2014, Appendix E

<sup>14</sup> Javelin Group, Phase I Environmental Site Assessment for the Former Schloff Chemical Site, 3938 Meadowbrook Road, July 14, 2017, p. 12.

<sup>15</sup> Braun Intertec (2011) Phase I ESA for Control Data Corporation Site

<sup>16</sup> Rust Environment & Infrastructure (1994) Trichloroethylene Release Remedial Investigation and Corrective Action Report, Lindberg Heat Treating Facility, 6981 Oxford St, St. Louis Park, Minnesota



**Reilly Tar Platteville extraction well W421 and Platteville monitoring well W18**, located near the corner of West Lake Street and Louisiana Avenue (Figure 2a), have been found to contain significant concentrations of chlorinated solvents and naphthalene. The 2007 sample from W421 contained 2,500 ug/L cDCE, 210 ug/L tDCE, 340 ug/L VC, and 2,500 ug/L naphthalene.<sup>17</sup> The 2004 sample (the earliest reported) from this well also contained 760 ug/L TCE and 42 ug/L PCE.<sup>18</sup> The concentrations of these parent compounds have decreased over time. The 2013 sample from W18 contained 950 ug/L cDCE, 120 ug/L tDCE and 1,100 ug/L VC.<sup>19</sup>

**The former National Lead/Golden Auto Superfund Site**, located approximately 600 feet to the south and southwest of the Site, is best known for the lead smelter which operated there between 1940 and 1979. This site also has a history of metalworking. Between 1892 and 1929, this facility was used by the Monitor Drill Company to manufacture farm implements (grain seeder/planters, also known as "drills").<sup>20</sup> There is also anecdotal evidence of liquid waste disposal in a well located in the northeastern corner of this property.<sup>21</sup> Despite this history and evidence, this property was largely uninvestigated for the presence of chlorinated solvents. MPCA investigated only the "waste disposal area" in the southwestern (upgradient) corner of the property. This 2015 investigation revealed VC at 14 ug/L in a deep Drift groundwater sample at B17 (Figure 2b).<sup>22</sup>

The STS 2005 Land Use and Source Characterization Report identified many of these sources and also dozens of historical machine shops, manufacturing facilities, and tool and die shops in the vicinity of Louisiana Avenue and Highway 7. This STS report is provided as Exhibit B. Further, STS pointed out that this area was not serviced by a sewer and water system until the mid-1970s. A long industrial history with a large number of industrial users of degreasers, coupled with a lack of wastewater treatment and disposal options and a vulnerable Drift aquifer, has led to significant, regional solvent contamination in the Drift aquifer, and likely deeper due to the presence of multi-aquifer wells.

Given the evidence of VOC contamination from the several likely sources to the deep Drift and Platteville aquifer identified above, it is highly likely that the above identified locations are sources of the deeper drift and Platteville VOC contamination underlying the Site. The Site is clearly not the source of chlorinated VOC and naphthalene contamination identified in the upgradient direction. Additionally, it becomes apparent that MPCA's depiction of the western-most boundary of the shallow contamination as 3356 Gorham Avenue is inaccurate and could lead to a false conclusion that the Site is at or very close to the origin of that contamination.

## 4. 3D VISUALIZATION OF SITE GROUNDWATER

In an effort to understand the spatial distribution of chlorinated VOCs in groundwater in St. Louis Park and Edina, Ramboll combined the MPCA's St. Louis Park groundwater database (as received in response to a 2018 Freedom of Information Act (FOIA) request), with the groundwater data collected by GHD in its investigation at the Site and displayed the data using Earth Volumetric Studio (EVS) software (C Tech Development Corporation). The MPCA database contains data for chlorinated VOCs

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<sup>17</sup> MPCA (2015) Preliminary Site Assessment Report for St. Louis Park Solvent Plume, Table 4

<sup>18</sup> *Ibid.*

<sup>19</sup> *Ibid.*

<sup>20</sup> St. Louis Park Historical Society web page for Monitor Drill [www.slphistory.org/monitordrill](http://www.slphistory.org/monitordrill), accessed August 5, 2019.

<sup>21</sup> STS, Land Use and Source Characterization Survey – Edina Well Evaluation, May 27, 2005,

<sup>22</sup> AECOM, St. Louis Park Investigation Report, April 2015, Table 2.



in Edina and St. Louis Park municipal wells as well as data from monitoring wells and Geoprobe samples MPCA has collected in the St. Louis Park/Edina area since the discovery of vinyl chloride in Edina well 7 in 2003. No investigative data were collected west or southwest of the Reilly Tar Site. Please note that the MPCA database did not include the data discussed above from Schloff Chemical, Control Data Corporation, or Lindberg Heat Treating. It also did not include the investigation derived waste samples from Flame Metals. EVS krigs and displays isoconcentrations of data in three dimensions. The combined database contains VOC groundwater data collected between 2007 and 2019. Because no single sampling event included all locations of interest across the region of study, a composite data set which pulled the most recent sampling information from each location was used for kriging and display.

Figure 3 displays the total DCE (cis and trans) concentrations above 10 ug/L in groundwater in cross section view along a vertical slice located roughly coincident with West Lake St/Highway 7 eastbound service Rd looking north. The location of the Site is identified by "6714". The total DCE in the Drift and Platteville aquifers appears to originate at W420 and W421, located southwest of the Site at West Lake Street and Louisiana Avenue, and also at B27, located west of the Site. However, because the database contains no data to the west of these wells, the plume is not defined in the upgradient direction. This shallow plume is relatively limited in extent, compared to the regional wide-spread low-level contamination observed in the deeper Prairie du Chien aquifer.

Figure 4 displays the PCE concentrations above 2 ug/L in groundwater in cross-section view along a vertical slice roughly coincident with Walker St looking north. This view shows that the upper and middle Drift aquifer are devoid of PCE contamination west of the Site, and that a source of PCE contamination is present on-Site that impacts the upper and middle Drift. Low-level PCE contamination is present in the deep Drift and Platteville aquifers both west (upgradient) and east (downgradient) of the Site.

## 5. CONCLUSION

Based on the available data presented herein, it is clear that chlorinated VOC contamination is present, particularly in the deep Drift and Platteville aquifers upgradient of the Site. The identified upgradient contamination is unrelated to activities at the Site. The upgradient boundaries of this contamination, however, remain undefined due to significant data gaps for groundwater in these depth horizons to the west of key contaminated wells such as Drift well W420, deep Drift Geoprobe B27, and Platteville wells W421 and W18. The locations of these data gaps<sup>23</sup> are shown in Figure 5 where the sample locations for the combined GHD and MPCA groundwater database are displayed in plan view. As shown by the sample density in Figure 5, the area in the immediate vicinity of the Site has been heavily investigated, whereas upgradient locations with significant chlorinated solvent concentrations have gone largely uninvestigated (most notably, the lack of chlorinated VOC evaluation on the Reilly Tar site and waste disposal bog). An adequate investigation and fair presentation of groundwater data would quite likely show more extensive regional deep Drift and Platteville groundwater contamination.

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<sup>23</sup> Well W29 is screened in the Prairie du Chien aquifer, wells W21, W24, and W33 are screened in the St. Peter aquifer, W19 is likely screened in the Platteville but this is not certain as well depth information is incomplete in the database, and the remainder of the sample locations inside the "data gap" areas are from the shallow Drift.

## 6. REFERENCES

AECOM (2014) Letter Report to MPCA – Nile Fellows, Site Investigation Report for St. Louis Park Solvent Plume – Former Flame Metals, June 19, 2014

AECOM (2015) St. Louis Park Investigation Report, April 2015, Table 2.

AECOM St. Louis Park Investigation – FY2016, July 2016

Javelin Group, Phase I Environmental Site Assessment for the Former Schloff Chemical Site, 3938 Meadowbrook Road, July 14, 2017

MPCA web page for the St. Louis Solvent Site <https://www.pca.state.mn.us/waste/st-louis-park-solvent-plume-and-vapor-intrusion-site>

MPCA (2017) Site Inspection Report for St. Louis Park Solvent Plume

MPCA (2015) Preliminary Site Assessment Report for St. Louis Park Solvent Plume

Reilly Tar & Chemical Corp Five Year Review Reports:

First – MPCA (1996)

Second – MPCA (2001)

Third – MPCA (2006)

Fourth – MPCA (2011)

Fifth – EPA and MPCA (2016)

St. Louis Park Historical Society web page for Monitor Drill [www.slphistory.org/monitordrill](http://www.slphistory.org/monitordrill), accessed August 5, 2019

St. Louis Park Historical Society web page for 7003 West Lake Street, [www.slphistory.org/lake7003/](http://www.slphistory.org/lake7003/), accessed August 5, 2019

STS (2005) Land Use and Source Characterization Survey – Edina Well Evaluation, May 27, 2005.

GHD (2018) Source Area Investigation Report for 6714 Walker St

MPCA (2018) Electronic Database provided in response to FOIA request

USGS (1984) Assessment of Ground-Water Contaminated by Coal-Tar Derivatives, St. Louis Park Area, Minnesota, Open File Report 84-867

USGS (1994) Hydrogeology and Ground-Water Flow in the Drift and Platteville Aquifer System, St. Louis Park, Minnesota, Water Research Investigation Report 94-4204

Delta Environmental (1990) Remedial Investigation Report for Schloff Chemical Site

Barr Engineering (1992) Remedial Investigation Report for Schloff Chemical Site

Braun Intertec (2011) Phase I ESA for Control Data Corporation Site

Rust Environment & Infrastructure (1994) Trichloroethylene Release Remedial Investigation and  
Corrective Action Report, Lindberg Heat Treating Facility, 6981 Oxford St, St. Louis Park,  
Minnesota.

Upgradient Sources of Groundwater Contamination  
6714 Walker Street  
St. Louis Park, Minnesota

## FIGURES



Reilly Tar  
Superfund Site

Monitor Drill/National Lead  
Superfund Site

6714 Walker Street

General Direction of  
Groundwater Flow



- Shallow Groundwater Contamination
- Deep Groundwater Contamination

Data Source: Plume boundaries from MPCA Vapor Study (<http://pcas02.pca.state.mn.us/slp/index.html>)

**MPCA'S DEPICTION  
OF VOC PLUME**

St. Louis Park  
Minnesota

**RAMBOLL**

FIGURE  
**1**

DRAFTED BY: KNB

DATE: 8/22/2019

PROJECT: 1690007575





# Reilly Tar Superfund Site

6714 Walker Street



W420 (Drift)		
Chemical	Result (ug/L)	Year
cisDCE	150	2007
Naphtha	2,500	
VC	50	
Xylenes	110	

Flame Metals (Unknown Location) (Drift)		
Chemical	Result (ug/L)	Year
TCE	1,030	2014 <sup>s</sup>

MW-3S (Schloff Chemical) (Drift)		
Chemical	Result (ug/L)	Year
PCE	12,000	1990

PW2 (Control Data Corporation) (Drift)		
Chemical	Result (ug/L)	Year
TCA	>3,600	1990

TW3 (Lindberg Heat Treating) (Drift)		
Chemical	Result (ug/L)	Year
TCE	51,000	1992

W421 (Platteville)		
Chemical	Result (ug/L)	Year
cisDCE	2,500	2007*
VC	340	
VC	800	
PCE	42	2004
TCE	760	
cisDCE	410	
VC	100	
Naphtha	360	



Monitor Drill/National Lead Superfund Site

W18 (Platteville)		
Chemical	Result (ug/L)	Year
cisDCE	950	2013 <sup>†</sup>
VC	1,100	

Abbreviations	
cisDCE	cis-1,2-dichloroethene
Naphtha	naphthalene
PCE	tetrachloroethylene
TCA	1,1,1-trichloroethane
TCE	trichloroethylene
VC	vinyl chloride

## UPGRADIENT CONTAMINATION IN THE DRIFT AND PLATTEVILLE AQUIFERS

St. Louis Park  
Minnesota

**RAMBOLL**

FIGURE  
2a

DRAFTED BY: KWB DATE: 8/22/2019 PROJECT: 1690007575

Shallow Groundwater Contamination  
Notes:  
Plume not vertically defined

Data Source: Plume boundaries from MPCA Vapor Study (<http://pce-qis02.pca.state.mn.us/rslp/index.html>)

General Direction of  
Groundwater Flow







B27 (70-74' bgs)		
Chemical	Result (ug/L)	Year
TCE	960	2016
Benzene	110	
Ethylbenzene	100	
Naphtha	650	
cisDCE	1900	
tDCE	1400	
VC	140	
Xylenes	128	

B26 (70-74' bgs)		
Chemical	Result (ug/L)	Year
Benzene	150	2016
Ethylbenzene	62	
Naphtha	140	
cisDCE	<25	
tDCE	790	
VC	34	
Xylenes	82	

B7 (71-75' bgs)		
Chemical	Result (ug/L)	Year
PCE	34	2015
TCE	160	
Benzene	33	
Naphtha	8	
cisDCE	1,100	
tDCE	100	
VC	37	

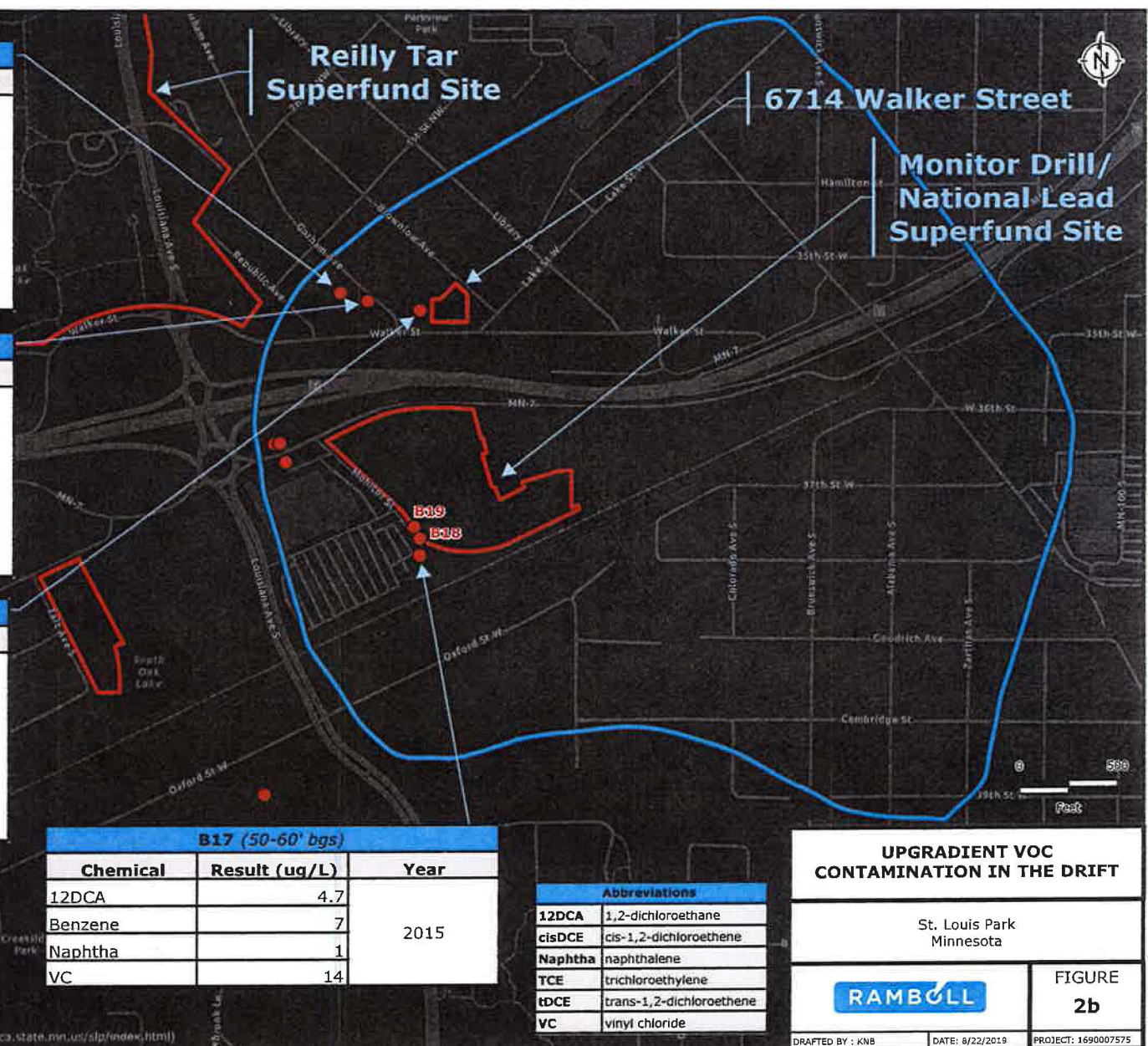
B17 (50-60' bgs)		
Chemical	Result (ug/L)	Year
12DCA	4.7	2015
Benzene	7	
Naphtha	1	
VC	14	

Abbreviations	
12DCA	1,2-dichloroethane
cisDCE	cis-1,2-dichloroethene
Naphtha	naphthalene
TCE	trichloroethylene
tDCE	trans-1,2-dichloroethene
VC	vinyl chloride

General Direction of Groundwater Flow

Shallow Groundwater Contamination  
 Notes:  
 tDCE the trans congener

Data Source: Plume boundaries from MPCA Vapor Study (<http://pca.ms02.pca.state.mn.us/sfp/index.html>)



**UPGRADIENT VOC CONTAMINATION IN THE DRIFT**

St. Louis Park  
Minnesota

**RAMBOLL**

**FIGURE 2b**

DRAFTED BY : KNB    DATE: 8/22/2019    PROJECT: 1690007575

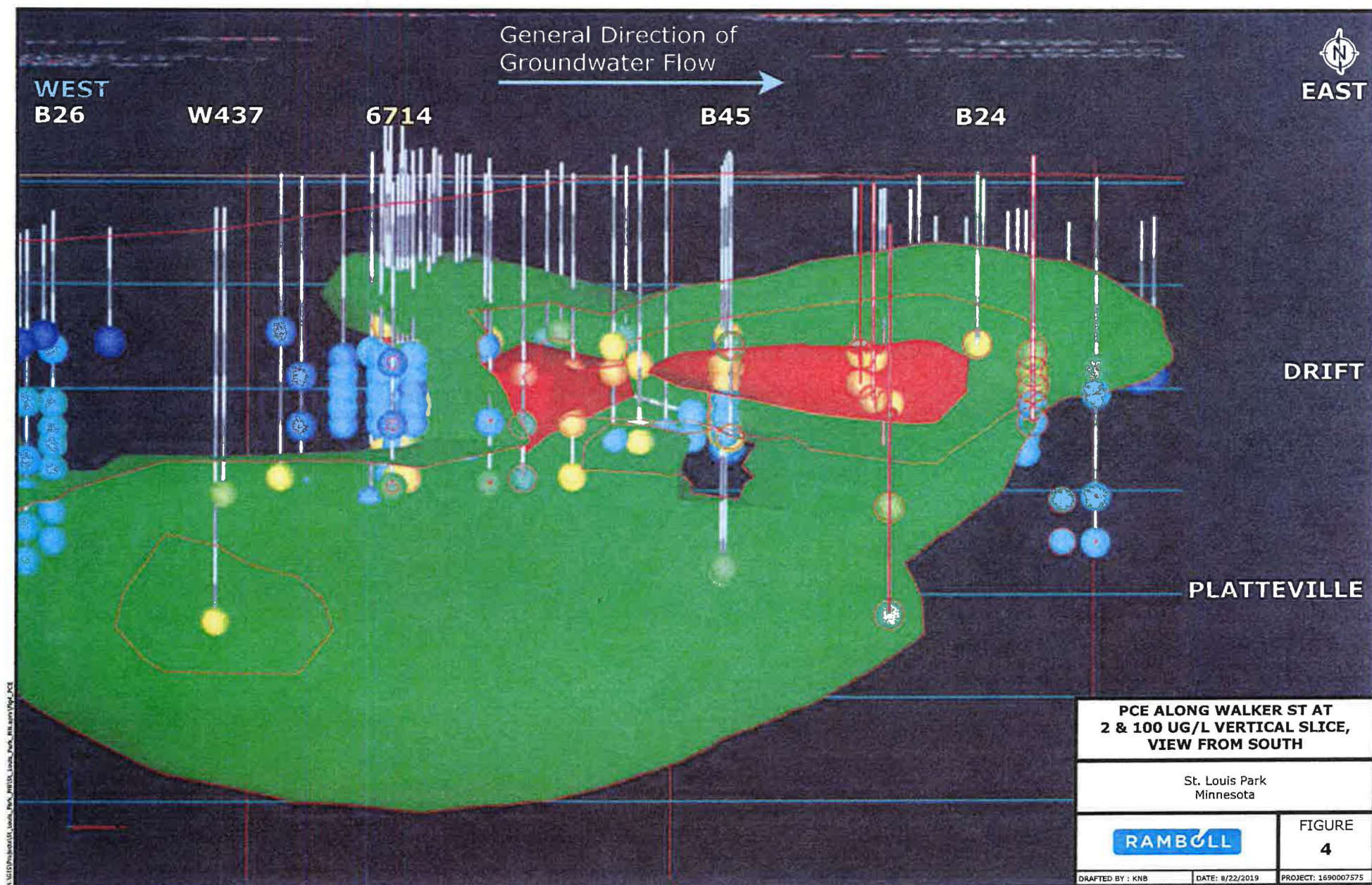






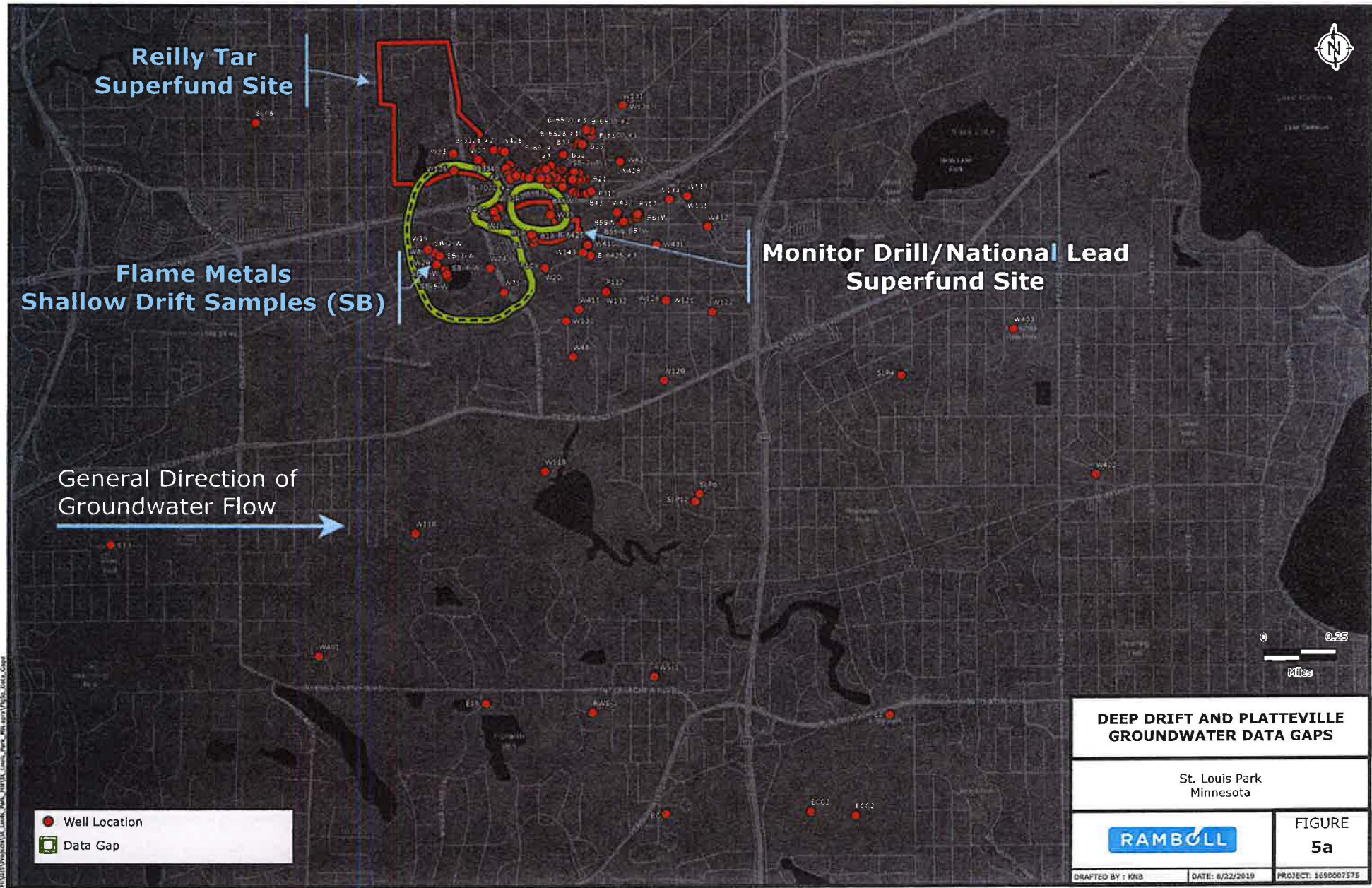






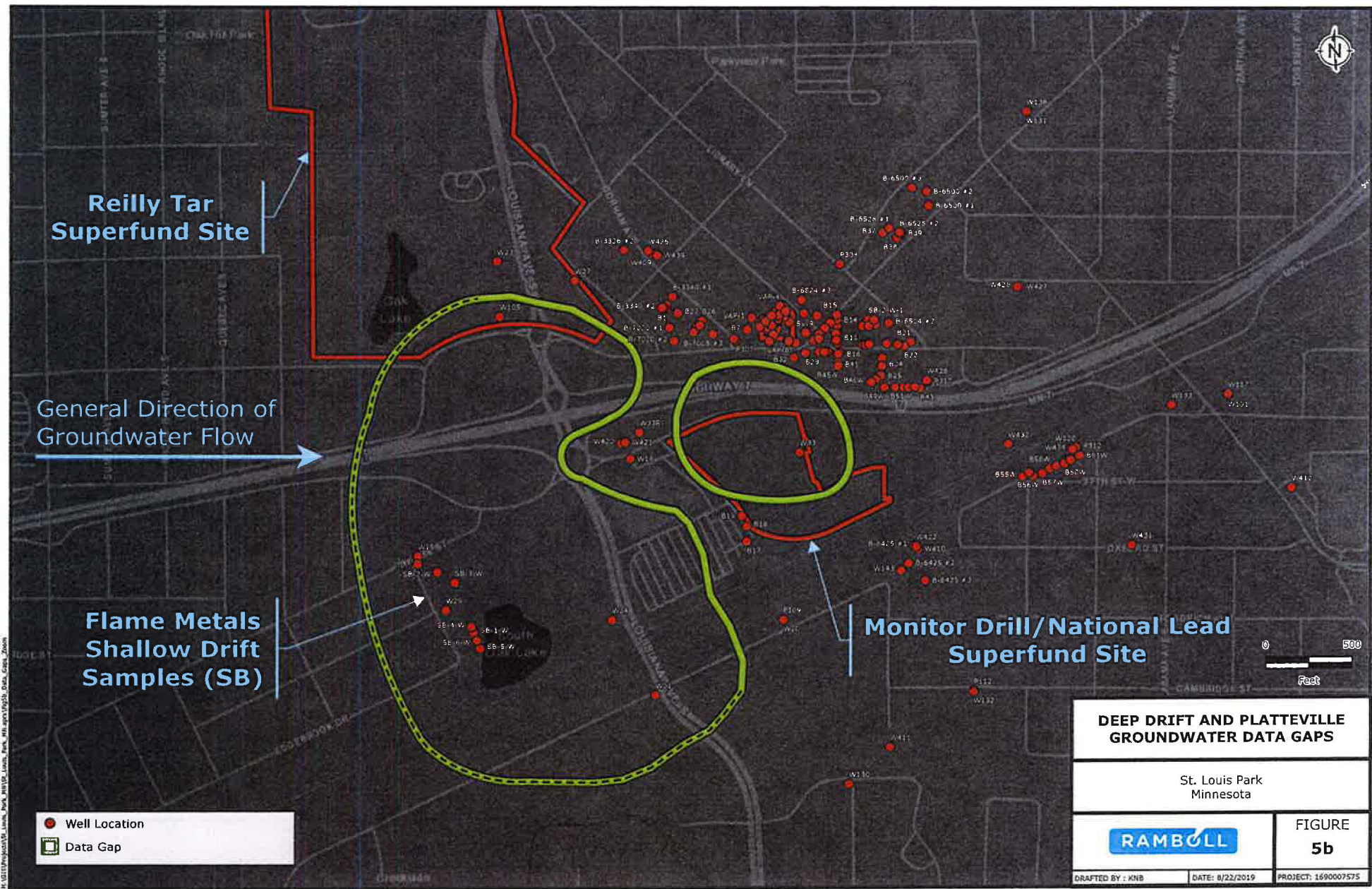












Reilly Tar  
Superfund Site

General Direction of  
Groundwater Flow

Flame Metals  
Shallow Drift  
Samples (SB)

Monitor Drill/National Lead  
Superfund Site

- Well Location
- Data Gap

DEEP DRIFT AND PLATTEVILLE  
GROUNDWATER DATA GAPS

St. Louis Park  
Minnesota

RAMBOLL

FIGURE  
5b

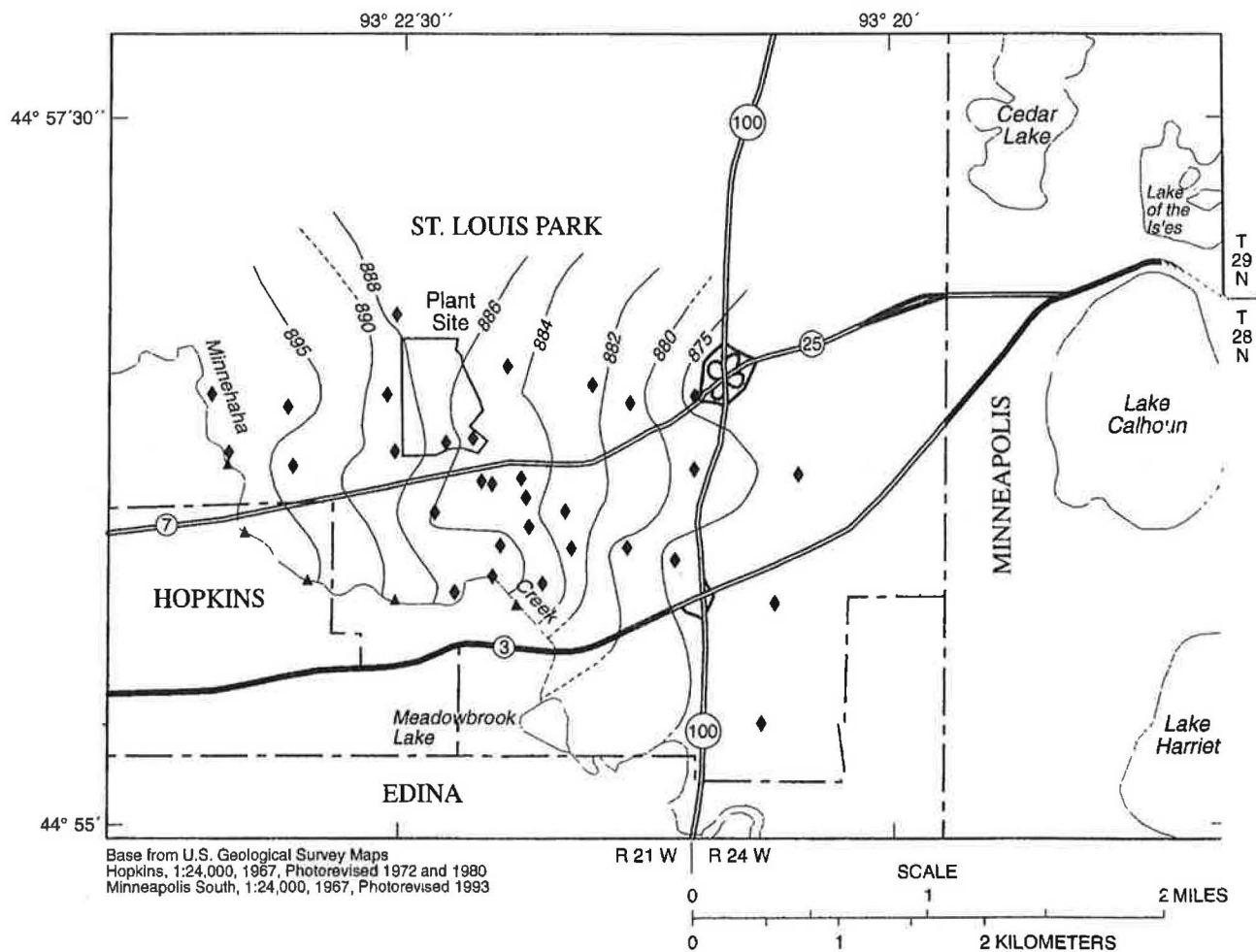
DRAFTED BY : KHB DATE: 8/22/2019 PROJECT: 1690007575





Upgradient Sources of Groundwater Contamination  
6714 Walker Street  
St. Louis Park, Minnesota

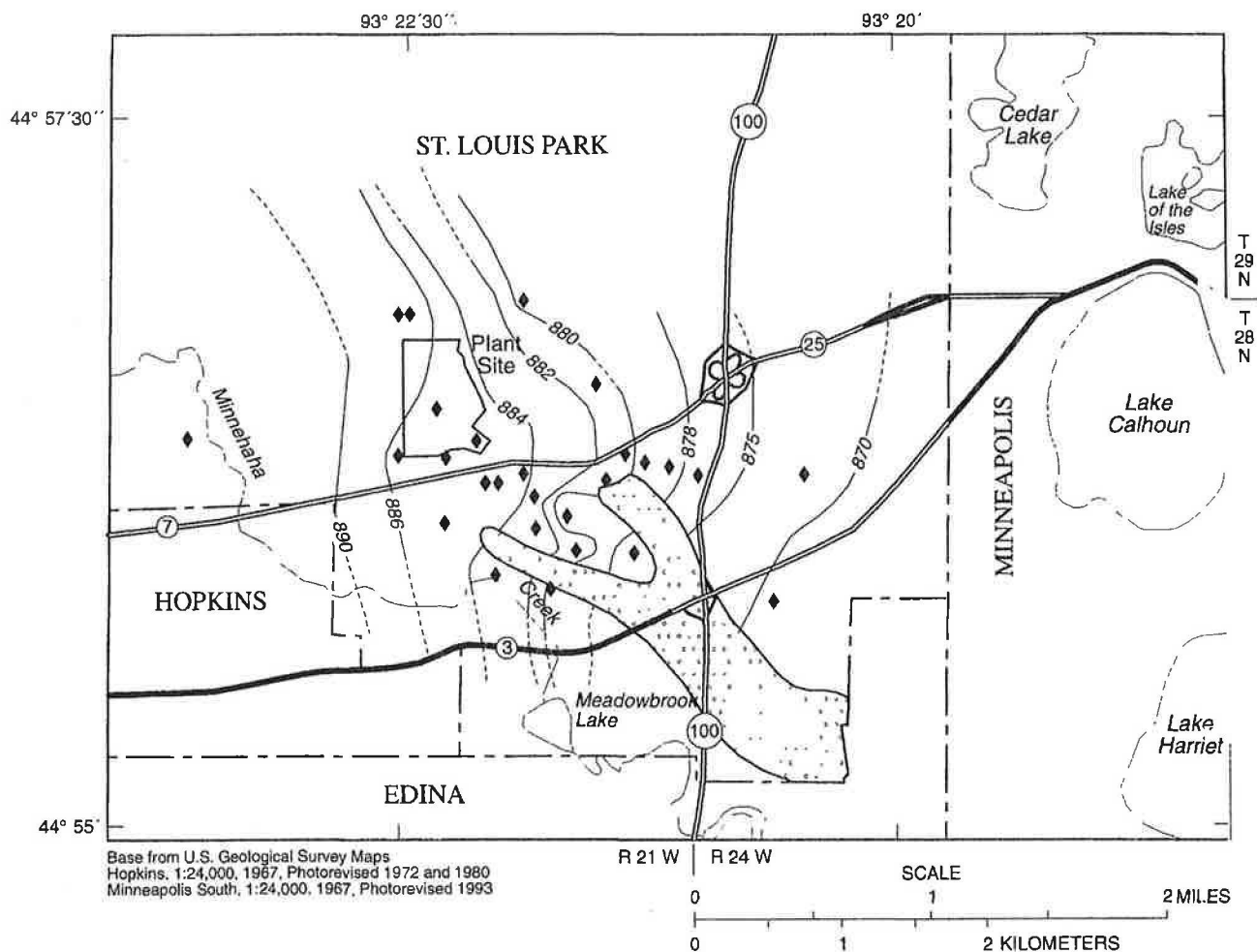
**EXHIBIT A**  
**POTENTIOMETRIC SURFACES FOR THE DRIFT AND PLATTEVILLE AQUIFERS**  
**NEAR REILLY TAR**



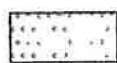
### EXPLANATION

- 890 — Potentiometric contour--Shows altitude at which water levels would stand in tightly cased wells. Dashed where approximate. Contour interval is variable. Datum is sea level.
- ◆ Observation well
- ▲ Stream-stage measurement location

**Figure 12. Composite potentiometric surface of the upper and middle drift aquifers, December 1987, St. Louis Park area, Minnesota.**



### EXPLANATION



Bedrock valleys--Area where Platteville aquifer is absent and drift is underlain by St. Peter aquifer.

— 890 — Potentiometric contour--Shows altitude at which water levels would stand in tightly cased wells. Dashed where approximate. Contour interval is variable. Datum is sea level.

◆ Observation well

**Figure 13. Potentiometric surface of the Platteville aquifer, December 1987, St. Louis Park area, Minnesota.**

Upgradient Sources of Groundwater Contamination  
6714 Walker Street  
St. Louis Park, Minnesota

**EXHIBIT B**  
**STS 2005 LAND USE AND SOURCE CHARACTERIZATION SURVEY REPORT –**  
**EDINA WELL EVALUATION**

**RECEIVED**

JUN 07 2005

**STS CONSULTANTS, LTD.**



**Land Use and Source  
Characterization Survey -  
Edina Well Evaluation**

Minnesota Pollution Control Agency  
St. Paul, Minnesota

STS Project 99613-XB







STS CONSULTANTS

STS Consultants, Ltd.  
10900 - 73rd Ave. N., Suite 150  
Maple Grove, MN 55369-5547  
763-315-6300 Phone  
763-315-1836 Fax

May 27, 2005

Mr. Nile Fellows  
Minnesota Pollution Control Agency  
520 Lafayette Road North  
St. Paul, MN 55155-4194

Re: Land Use and Source Characterization Survey - Edina Well Evaluation;  
STS Project 99613-XB

Dear Mr. Fellows:

STS Consultants, Ltd. (STS) has completed a land use and source characterization survey of a commercial/light industrial area of St. Louis Park as part of the Edina Well Evaluation. Information sources, including city directories, Sanborn fire insurance maps, an environmental database of known release sites and Minnesota Pollution Control Agency files were reviewed to develop a historical perspective of possible sources of volatile organic compound contamination to groundwater in the area. Several possible sources of contamination were identified.

We appreciate having the opportunity to be of assistance to you on this project. If you have any questions or require further assistance, please feel free to contact us at 763/315-6300.

Sincerely,

STS CONSULTANTS, LTD.

Gary J. Rathbun, PSS  
Senior Soil Scientist

Robert L. DeGroot, PG PE  
Principal Engineer

GJR/dn  
Encs.



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## EXECUTIVE SUMMARY

The land use and source characterization survey identified several potential sources of volatile organic compound contamination to groundwater in the study area. The potential sources were identified through review of readily available public information, interpretation of historical property uses with potential to impact the environment and available documentation of known contamination. The following potential sources of contamination were identified by the survey.

- Numerous machine shops, including tool and die manufacturers, engine rebuilders and metal fabricators, operated in the area primarily east of Louisiana Avenue and north of State Highway 7. Solvents were typically used to clean metal parts produced by machining operations. Release of solvents to the environment could have occurred through on-site sewage disposal systems, leaking municipal sanitary sewer piping, improper disposal practices or other means.
- Liquid wastes were reportedly disposed through a former water well located in the northeast corner of NL Industries Taracorp/Golden Auto property near the west end of a building at 7003 West Lake Street in St. Louis Park, Minnesota. A geotechnical engineer subcontracted to install monitoring wells on the site observed liquid wastes dumped into a water well. Review of MPCA files indicated groundwater from monitoring wells on the site was analyzed only for inorganic parameters, including lead and arsenic.
- A release of dry cleaning fluid (perchloroethylene, PCE) from Schloff Chemical is known to be migrating downward through groundwater. The extent of groundwater impacts at depth has not been fully defined.
- Groundwater investigations of known VOC releases in the area identified low concentrations of VOCs in groundwater. Some of these investigations concluded that possible off-site unknown sources of VOC contamination existed.

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## **1.0 INTRODUCTION**

### **1.1 Site Description**

The center of the survey area is located approximately midway between two City of St. Louis Park wells, W421 and W434, known to be impacted by VOCs, see Figures 1 and 2, Appendix. An environmental database search for known environmental sites extended one mile from the survey area center. The city directory review was limited to non-residential properties within an area bounded by 33rd Street West on the north, Zarthan Avenue South on the east, 39th Street West on the south and Louisiana Avenue on the west, see Figure 3, Appendix. The project area is currently served by public utilities but was served by private wells and septic systems until the mid-1970s.

### **1.2 Scope of Work**

The land use and source characterization survey was performed in general conformance with Task 1001 of STS Proposal 12764PP dated March 16, 2005.

### **1.3 Contractual Agreement**

The Phase I Environmental Site Assessment was prepared by STS Consultants, Ltd. for the use of the Minnesota Pollution Control Agency under Work Order No. SFST0513 dated March 17, 2005 of Master Contract No. A-48447.



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## **2.0 PHASE I ENVIRONMENTAL SITE ASSESSMENT RESULTS**

The remaining portions of this report discuss the findings of each of the items reviewed for our scope of work. The opinion developed through these findings relative to potential contamination is provided in the Conclusions section of this report.

### **2.1 Site History**

The sources used to develop a site history are described in Sections 2.2.1 through 2.2.3 below. Site history is presented in Section 2.2.4.

#### **2.1.1 Aerial Photographs**

Aerial photographs from 1953, 1960, 1967, 1971, 1987 and 1997 were reviewed at the Borchert Map Library at the University of Minnesota in Minneapolis, Minnesota.

#### **2.1.2 Contact with City of St. Louis Park**

Mr. Manny Camilon, Environmental Health and Safety Office for the City of St. Louis Park, was contacted for information regarding possible releases to the environment in the study area. File information obtained from the City of St. Louis Park is included in Appendix A.

A portion of a report in City of St. Louis Park files was copied. The report in the file was:

- Interim Response Action Plan - Groundwater Extraction and Discharge System, Printed Circuits Operations, Control Data Corporation, St. Louis Park, Minnesota dated October 1988

#### **2.1.3 City Directories**

Suburban Polk city directories for the years 1956, 1961, 1966, 1970/71, 1977, 1982 and 1988 were reviewed at the Minneapolis Public Library in Minneapolis, Minnesota.



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Business names indicative of use of VOC compounds or solvents, such as machine shops, tool and dye shops, dry cleaners and electronics firms, within the study area were noted.

#### **2.1.4 Sanborn Fire Insurance Maps**

Sanborn fire insurance maps for the study area for the years 1912, 1950, 1963 and 1966 were obtained from Environmental Data Resources Inc. Copies of the Sanborn maps with facilities of potential environmental concern highlighted are included in Appendix B.

#### **2.1.5 Environmental Database Report**

Potential risk sites on government databases were searched by Environmental Data Resources, Inc. (EDR). The search distance radii followed ASTM 1527-00 standards for Phase I Environmental Site Assessments. The EDR Radius Map report is included in Appendix C.

#### **2.1.6 MPCA File Review**

Environmental sites listed in the EDR database report were reviewed for sites with potential for release to the environment. MPCA Voluntary Investigation and Cleanup (VIC) program sites listed in the EDR database report were reviewed on the MPCA website to assist with file selection based on whether remedial investigations had been performed. In addition, files for a Permanent List of Priorities (PLP) and Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) sites were requested. The following files were reviewed at MPCA Headquarters in St. Paul, Minnesota:

- Androc Metals - VIC Site VP1810
- Highway 7 at Louisiana - VIC Site VP10880
- Lindberg Heat Treating - VIC Site VP4800
- Mid-America Meter No. 2 - VIC Site VP14151
- Newport on Seven Apartments No. 2 - VIC Site VP13351
- Richatti Property - VIC Site VP17990

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- U-Save Park Self Storage - VIC Site VP15510
- 7115 West Lake Street - VIC Site VP18500
- Schloff Chemical (PLP)
- Taracorp Industries (CERCLIS)

Copies of select reports from several of the sites are included in Appendix D. The reports are listed below.

- Trichloroethylene Release Remedial Investigation and Corrective Action - Lindberg Heat Treating Facility, 6981 Oxford Street, St. Louis Park, Minnesota, Rust Environmental & Infrastructure, Rust E&I Project No. 42799.100 dated April, 1994
- Phase II Environmental Site Assessment - Minnesota Rubber Facility, Braun Intertec Corporation, Project SP-03,00405 dated November 13, 2003
- Environmental Investigation Report - Newport on Seven Apartments, Peer Environmental & Engineering Resources, Inc., Peer File #9215.02 dated May 3, 2001
- Phase I Remedial Investigation Report - Schloff Chemical Company, Delta Environmental Consultants, Inc., Delta Project No. 10-88-706 dated May 18, 1990
- Phase II Remedial Investigation Report - Schloff Chemical and Supply Company Site, Barr Engineering Company, prepared for Minnesota Pollution Control Agency, April 1992

Some of the files contained no information or had no apparent relevance to this survey. These files included:

- Mid-America Meter #2 - no file information
- Highway 7 at Louisiana - Reilly Tar impacts
- Androc Metals - pesticide and pentachlorophenol impacts
- Richatti Property - no VOCs above drinking water limits detected
- 7115 West Lake Street - while tailings with high pH from acetylene manufacturer deposited on property
- U-Save Park Self Storage - Phase I Environmental Site Assessment

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### 2.1.7 Site History

Portions of the study area in the City of St. Louis Park have been in commercial and industrial use for nearly a century. Commercial businesses included many machine shop operations throughout the area. Industrial uses included a secondary lead smelter and manufacturing facilities. A farm implement manufacturer (early 1900s) formerly occupied the lead smelter site. The Reilly Tar pole treating facility operated in the northwest corner of the study area from 1917 to 1972. Site history developed from each source is summarized below.

#### 2.1.7.1 Aerial Photographs

The 1953 aerial photograph showed Gorham Avenue apparently newly constructed with undeveloped lots along its east and west sides. A residential area was to the east and small commercial buildings were to the west and south towards Highway 7. The Reilly Tar site was occupied by the pole treating facility. Light colored fill materials were observed in an area west of Monitor Street and north of South Street associated with a former acetylene manufacturing plant. The fill materials were reportedly calcium hydroxide. Marsh areas and marsh areas undergoing filling were noted in the vicinity of the intersection of Louisiana Avenue with Highway 7. The 1960 aerial photograph was similar to the 1953 aerial photograph except that additional commercial buildings were present along the south side of Gorham Avenue.

The 1967 and 1971 aerial photographs showed additional commercial development at the north end of Gorham Avenue. An apparent automobile salvage yard (former Golden Auto) was in the southwest quadrant of the intersection of Hampshire Avenue South and Lake Street West. The 1987 and 1997 aerial photographs showed a development pattern similar to that which exists today.

#### 2.1.7.2 Contact with City of St. Louis Park

Mr. Camilon retrieved file information regarding the former Golden Auto site and the Control Data Corporation site at 3965 Meadowbrook Road (approximately 500 feet



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southeast of Schloff Chemical). Mr. Camilon also related the history of the study area during a driving tour.

Photographs in the Golden Auto file showed extensive spillage of fluids associated with automobiles along the south side of the building at 7003 West Lake Street. Records showed that the facility was cited for hosing spilled liquids to a storm sewer which emptied to a nearby storm water pond. No information regarding possible disposal of liquids into a water well on the site were observed in the files.

The Interim Response Action Plan for the Control Data Corporation (CDC) site showed a VOC plume apparently migrating to the southeast consistent with the plume migration associated with the Schloff Chemical VOC release, see Section 2.1.7.5, below. The report indicated that "Investigations conducted to date have not identified a source or specific event that could be considered the source of the VOC distribution under the site".

Mr. Camilon confirmed former machine shop locations within the study area consistent with the city directory review (see Section 2.1.7.3 below). Mr. Camilon was not aware whether former or existing machine shop operations or other facilities in the study area had releases of VOCs to soil and/or groundwater.

#### 2.1.7.3 City Directories

The city directory review identified numerous machine shops, tool and dye manufacturers and other business types which may have used solvents as part of facility operations. Table 1 summarizes the city directory listings for the search area.

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**Table 1**  
**City Directory Review by Year**  
**Businesses which may have used solvents**

**1956**

<b>Address</b>	<b>Business Name</b>	<b>Business Type</b>
3601 Alabama Ave. S.	Federal Tool Mfg. Co.	tool manufacturer
6325 Cambridge St.	Magnetic Controls Co.	electronic equipment
6401 Cambridge St.	Hedquist & Nelson	metal fabricators
5925 Highway 7	Century Products Co.	machinists
3412 Louisiana Ave.	Park Cleaners	dry cleaners
3305 Republic Ave.	Lakeshore Mfg. Co.	agricultural implement mfr.
3333 Republic Ave.	Precisions Motor Rebuilders	auto repair
6518 Walker St.	Ringerud Equipment Co.	tool mfrs.

**1961**

<b>Address</b>	<b>Business Name</b>	<b>Business Type</b>
5806 - 36th St. W.	Cedar Eng. Div. of Control Data Corp.	mfr.
6327 Cambridge Ave.	Gopher Motor Rebuilding	engine repair
6418 Cambridge Ave.	Mid-City Precision Inc.	machinists
6521 Cambridge Ave.	Hamer Machine Co.	--
3358 Gorham Ave.	Malco Products	metal goods mfr.
6015 Highway 7	Park-Hy Auto Service	auto repair
6201 Highway 7	Johnson's Auto Service	auto repair
3412 Louisiana Ave.	Park Cleaners	dry cleaners
3351-55 Republic Ave.	Reuter Inc.	machinists

**1966**

<b>Address</b>	<b>Business Name</b>	<b>Business Type</b>
5806 - 36th Ave.	Control Data	
3391 Brownlow Ave.	Thalmo Corp.	tool & die mfr.
6327 Cambridge St.	Gopher Motor Rebuilding Inc. (plant)	
6401 Cambridge St.	Gopher Motor Rebuilding Inc.	
6405 Cambridge St.	ADC Products	electronic equipment
	Magnetic Controls Co.	--
6418 Cambridge St.	Mid City Precision Inc.	machine shop
6521 Cambridge St.	Hamer Machine Co.	
	Model Research Inc.	electronic research
6425 Goodrich Ave.	Lyons Mfg. Inc.	machine shop
3304 Gorham Ave.	Richlind Metal Fabricators	
3320 Gorham Ave.	Micko Tool & Engineering	machinists
3356 Gorham Ave.	Credo Tool & Die Co.	mfrs.
5925 Highway 7	Dayton Rogers Mfg. Co. (plant)	hydraulic equipment mfrs.
6800 Lake Street	Aremco Inc.	machinists
3333 Republic Ave.	Fors Metal Specialties, Inc.	--
3565 Wooddale Ave.	Thiele Engineering Co.	packaging machine mfrs.

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### 1970/71

Address	Business Name	Business Type
3391 Brownlow Ave.	Thalmo Corp.	tool & die mfr.
6323 Cambridge Ave.	Superb Associates Precision Machine Parts	--
6327 Cambridge Ave.	Gopher Motor Rebuilding Inc. (plant)	
6521 Cambridge Ave.	Hamer Machine Co.	--
3830 Edgewood Ave.	Proto-Type Inc. Western Tool & Die	tool & die mfrs.
6425 Goodrich Ave.	Daufelt Industries Inc.	platers
3304 Gorham Ave.	Raleigh Industries Inc.	machinists
3320 Gorham Ave.	Micro Tool & Engineering	machinists
6800 Lake Ave.	Microtech Inc.	machinists
3406 Louisiana Ave.	Miko Machine Tool	machinists
3333 Republic Ave.	Fors Metal Specialties Inc.	--
7013 Walker St.	Lowell Inc.	machine shop

### 1977

Address	Business Name	Business Type
6315 Cambridge Ave.	Electro Die Inc.	tool & die shop
6324 Cambridge Ave.	Spectra-Strip of Minneapolis	printed circuits
6327 Cambridge Ave.	Gopher Motor Rebuilding Inc. (plant)	--
6416 Cambridge Ave.	Mag-Tech Inc.	electronic equipment mfr.
6416-1/2 Cambridge Ave.	Tru-It Mfg.	machine shop
6519 Cambridge Ave.	Hamer Machine Co.	--
6521 Cambridge Ave.	Hamer Machine Co. Esko Wire Co.	-- machine shop
3838 Edgewood Ave.	Altmann Machine	tool & die machinists
3840 Edgewood Ave.	Norskil Tool & Mfg. Co.	--
3300 Gorham Ave.	D-L's Die Cutting Inc.	--
3304 Gorham Ave.	Drill A Matic	machine shop
3338 Gorham Ave.	Aljon Tool Inc.	mfrs.
5925 Highway 7	Dayton Rogers Mfg. Co.	hydraulic equipment
3404 Louisiana Ave.	Arenco Inc.	machine shop
6751 Oxford St.	Lowell Inc.	machine shop
7005 Oxford St.	RL Tool	machinists
7009 Oxford St.	Ver-Sa-Til Assoc. Inc.	machine shop

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### 1982

Address	Business Name	Business Type
6315 Cambridge Ave.	Electro Die Assoc. Inc.	tool & die shop
6318 Cambridge Ave.	Universal Circuits	--
6324 Cambridge Ave.	Universal Circuits	printed circuits
6327 Cambridge Ave.	Gopher Motor Rebuilding Inc. (plant)	
6519 Cambridge Ave.	Hamer Machine Co.	
6521 Cambridge Ave.	Esko Wine Co. Hamer Machine Co.	machine shop
3836 Edgewood Ave.	Altmann Machine	storage
3838 Edgewood Ave.	Altmann Machine	tool & die
3338 Gorham Ave.	Aljon Tool	mfrs.
3404 LeCraig Lane	Aremco Inc.	gear cutters & precision machine
6751 Oxford St.	Lowell Inc.	machine shop
7009 Oxford St.	Ver-Sa-Til Assoc. Inc.	machine shop

### 1988

Address	Business Name	Business Type
6327 Cambridge Ave.	Gopher Motor Rebuilding (plant)	
6401 Cambridge Ave.	Gopher Motor Rebuilding (plant)	
6521 Cambridge Ave.	Hamer Machine Co.	
3838 Edgewood Ave.	Altmann Machine	tool & die
3318 Gorham Ave.	Medina Precision	machine shop
5925 Highway 7	Dayton Rogers Machine Products	machine parts mfr.
6416 Highway 7	Professional Instruments Co.	machine shop
3404 Library Lane	Arenco Inc.	precision machinery
6831 Oxford St.	Control Data	
6853 Oxford St.	Ultramatic Inc.	mfg. job shop
7009 Oxford St.	Ver-Sa-Til Assoc. Inc.	machine shop
3305 Republic Ave.	Hoff Machining	--
3313 Republic Ave.	Twin City Machine Tool Rebuilding	--

The listings show an increase in the number of businesses possibly using solvents from 1956 through 1977, consistent with the increase in commercial buildings observed in the aerial photographs. The 1982 and 1988 city directory listings showed fewer businesses which possibly used solvents in the study area. It should be noted that sanitary sewer and water service was apparently extended into the area in the mid-1970s. Potential exists that



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solvents disposed through on-site sewage disposal systems (septic systems) could enter the groundwater.

#### 2.1.7.4 Sanborn Fire Insurance Maps

The Sanborn fire insurance maps show locations of many of the machine shops identified by the city directory search. In addition, various manufacturing facilities are shown. The Sanborn maps in the Appendix were arbitrarily numbered for reference purposes.

A Moline Plow Company manufacturing plant occupied property in the southwest quadrant of Lake Street and Central Avenue (now Hampshire Avenue) in 1912. Machine shops were associated with the plant, see Sanborn map page 3. Other machine shop locations are highlighted on pages 10, 13, 15, 17, 19, 21, 22, 25, 27 and 30. A large machine shop is shown adjacent to municipal well 434 on page 19. Whether release(s) of solvents occurred from the machine shop(s) is unknown. A generalized map depicting the locations of machine shops and manufacturing facilities relative to two municipal wells impacted by VOCs is included as Figure 2 in the Appendix.

#### 2.1.7.5 Environmental Database and MPCA File Review

Several environmental sites identified by the EDR environmental database report were selected for review of available MPCA files. The sites selected for review primarily consisted of MPCA VIC sites. Sites listed as small quantity generators of hazardous waste, petroleum leaking underground storage tank (LUST) sites and underground storage tank sites were not requested for file review. The EDR Report is included in the Appendix for reference purposes.

Information contained in the reports reviewed at the MPCA (see Appendix D) is summarized below.

- Lindberg Heat Treating Facility - The Lindberg Heat Treating facility is located in the southwest quadrant of the intersection of Louisiana Avenue with Oxford Street. A release of trichloroethylene (TCE) was identified from a former degreaser area within the

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building. Soil vapor extraction was used to remediate soils in the TCE release area. Groundwater analysis results from four monitoring wells installed outside the building found low concentrations of VOCs in groundwater. Three of the four monitoring wells were screened in sandy outwash materials below glacial till at depths of 20 to 30 feet below groundwater level. The base of the screens were set at or in glacial till found below the sandy outwash materials. No apparent plume of VOCs was identified by the Remedial Investigation. The report recommended closure of the site.

- Minnesota Rubber facility - The Phase II Environmental Site Assessment for the Minnesota Rubber facility located near the intersection of Wooddale Avenue with Oxford Street identified low concentrations of VOCs and semi-volatile organic compounds (SVOCs) in groundwater. The groundwater samples were obtained through temporary monitoring wells. The report concluded that VOCs identified in the groundwater were likely from an off-site, up-gradient (north relative to site location) source.
- Newport on Seven Apartments - The Newport on Seven Apartments building is located in the northeast quadrant of the intersection of Pennsylvania Avenue with the State Highway 7 frontage road adjacent to the south side of the former Reilly Tar site. Groundwater samples were obtained through temporary wells (soil probes). The groundwater analyses primarily identified petroleum related VOCs and SVOCs thought to be associated with the adjacent Reilly Tar site. No chlorinated VOCs were identified.
- Schloff Chemical Company - Schloff Chemical Company was a distributor of dry cleaning fluid (perchloroethylene, PERC, PCE) located in the northwest quadrant of the intersection of Meadowbrook Road with Powell Road near the southwest corner of the study area, see Figure 2. Groundwater impacted by PCE is in a plume trending to the east-southeast from the source area at the former Schloff Chemical Company building (see diagrams in Appendix D). Vertical migration of PCE is shown by cross-sections in the Phase II Remedial Investigation Report. The release is in outwash sands which likely contact the Platteville limestone bedrock formation approximately 50 feet or more below grade. A downward vertical gradient in the glacial aquifer was identified in the report.

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- Taracorp Industries (Golden Auto) - Recycling of lead batteries occurred in the southern portion of the property. Golden Auto, an automobile recycler, operated on the northern portion of the property (7003 West Lake Street). Groundwater samples from two monitoring wells installed by Subterranean Engineering in the late 1970s were analyzed for arsenic and lead but not for VOCs.

Mr. Mervyn Mindess, formerly of Subterranean Engineering (now an STS employee), was interviewed regarding the Golden Auto site. Mr. Mindess related that he observed liquids being disposed down a former water well located at the west end of the building at 7003 West Lake Street. The approximate location of the well is depicted on Figure 4, Appendix. The water well no longer appears to exist based on recent site observations. Potential exists that hazardous materials were disposed through the water well.

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May 27, 2005

### 3.0 CONCLUSIONS

The land use and source characterization survey identified many potential sources of volatile organic compound contamination to groundwater in the study area. The potential sources included:

- Numerous manufacturing facilities, including machine shops, tool and die makers, engine rebuilders and metal fabricators, have historically operated in the study area. Solvents used to clean metal parts could have been released to the environment through on-site sewage disposal systems, leaking municipal sanitary sewer lines, improper disposal practices or other means.
- Liquid wastes were reportedly disposed through a former water well located at 7003 West Lake Street in St. Louis Park, Minnesota (former Golden Auto Parts property). The possibility exists that this disposal method was also practiced by other generators of hazardous wastes in the area.
- A release of perchloroethylene from Schloff Chemical is known to be migrating downward through groundwater. The vertical extent of groundwater impacts has not been fully defined.
- Groundwater investigations of known VOC releases in the area identified low concentrations of VOCs in groundwater. Some of these investigations concluded that possible off-site unknown sources of VOC contamination existed.



Edina Well Evaluation  
STS Project 99613-XB  
May 27, 2005

#### 4.0 GENERAL QUALIFICATIONS

The information presented in this report is based on literature and informal discussions with various agencies and personnel. The conclusions presented above are the result of our professional interpretation of the information collected in this study. Many conclusions in the evaluation were based on information from others and readily available information. Therefore, if new information is disclosed or an alteration of the informal and verbal information occurs, it could result in the redirection of the conclusions presented in this report. The soil and groundwater on this property have not been chemically analyzed and their quality has not been evaluated. STS Consultants, Ltd. does not "certify" or guarantee that any property is free from environmental impairment.

## APPENDIX

### Figures

- Figure 1 - General Site Diagram
- Figure 2 - Land Uses with Potential for Environmental Impact
- Figure 3 - Street Diagram for City Directory Review
- Figure 4 - Golden Auto Well Diagram

### Appendices

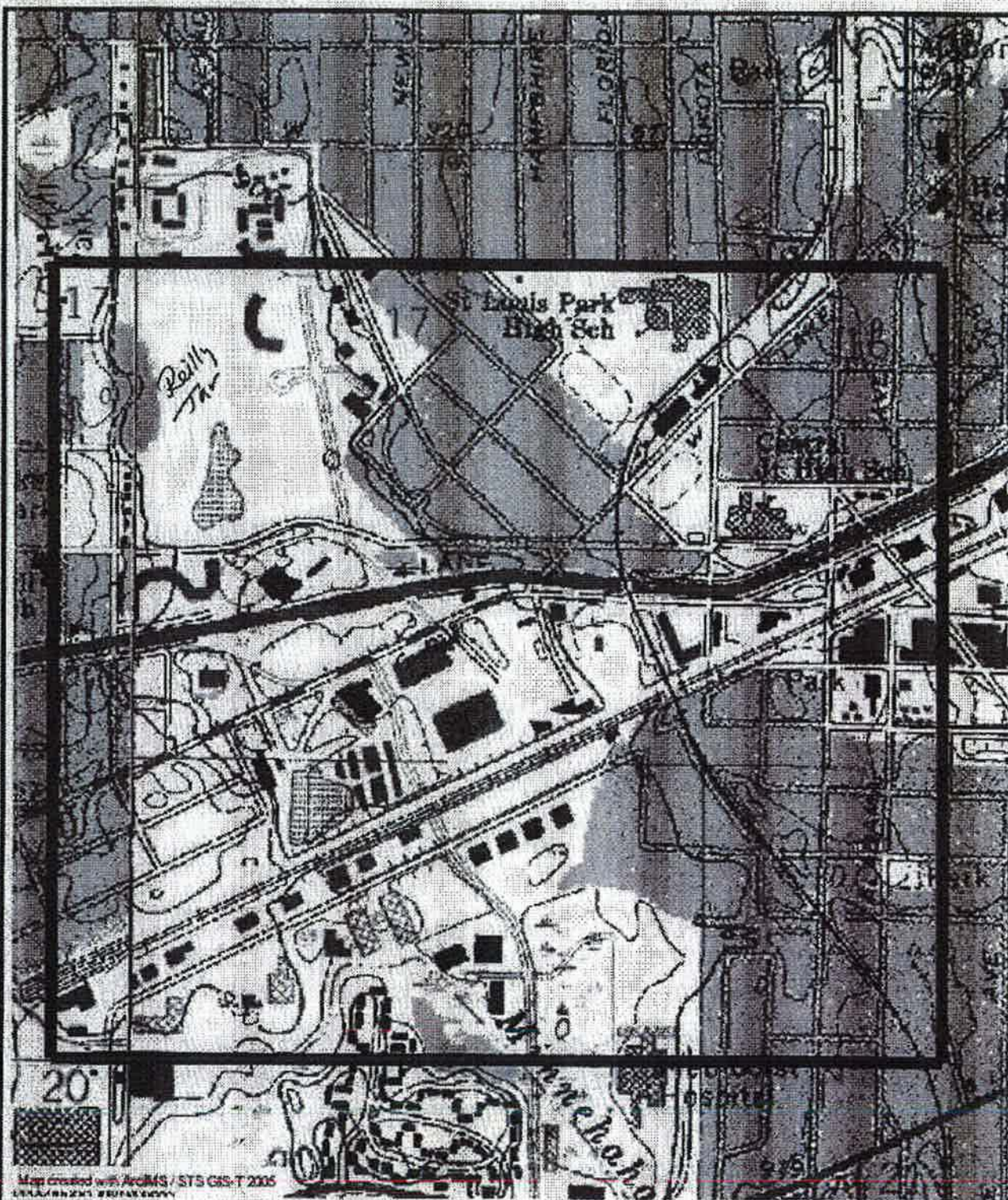
- Appendix A - City of St. Louis Park File Information
- Appendix B - Sanborn Fire Insurance Maps
- Appendix C - EDR Radius Map Report
- Appendix D - MPCA File Information







NORTH



Map created with ArcGIS / STS GIS-T 2005  
LISA/MSX/STP/STP/STP



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**GENERAL SITE DIAGRAM**  
**Land Use and Source Characterization Survey**  
**For**  
**Minnesota Pollution Control Agency**

Drawn: GJR 05/12/2005

Checked: GJR 05/12/2005

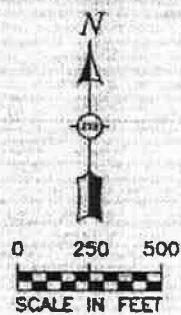
Approved: RLD 05/13/2005

PROJECT  
NUMBER **99613-XB**

FIGURE  
NUMBER **1**







SCHLOFF CHEMICAL  
PCE RELEASE &  
CONTROL DATA  
CORPORATION VOC  
MONITORING

BASE MAP PROVIDED BY MARKHURD AERIAL PHOTOGRAPH DATED APRIL 04, 2000.



[illegible]

**STREET DIAGRAM**  
City Directory Review Area  
Land Use and Source Characterization Survey  
St. Louis Park, Minnesota

FIGURE NUMBER 3





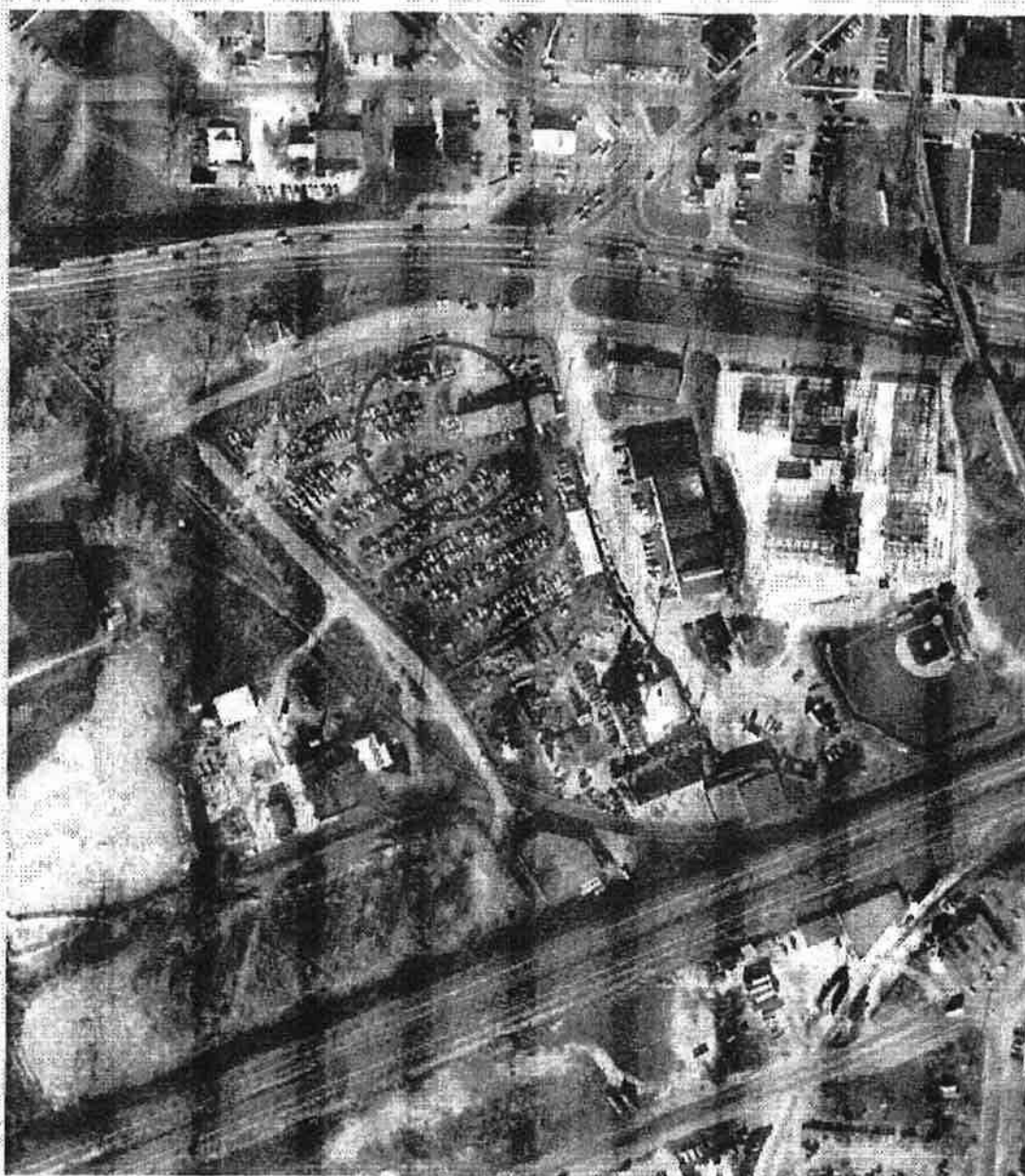


Figure 4 - Liquid wastes were reportedly dumped down a former water well at the west end of a building associated with the former Golden Auto property in St. Louis Park, Minnesota.



Upgradient Sources of Groundwater Contamination  
6714 Walker Street  
St. Louis Park, Minnesota

**EXHIBIT C**  
**2010 POTENTIOMETRIC SURFACE FOR THE PRAIRIE DU CHIEN AQUIFER**  
**FROM THE REILLY TAR FOURTH FIVE-YEAR REVIEW**







Well ID  
Water Level (ft)  
State of Benzene/Pyridine and  
Dibenz(a,h)anthracene (ppt)  
Total Carcinogens: PAH (ppt)  
Total Other PAH (ppt)  
Q = Not detected  
N = Not sampled

10 Foot Groundwater  
Level Curbline  
Paddy Site



**Figure 4-2**  
**Summary of Groundwater**  
**Monitoring Results**  
**Prarie du Chien-Jordan Aquifer**  
**Second Half, 2010**



